

WHAT IS CLAIMED IS:

1. A method for inserting a Protocol Data Unit (PDU) Length Indicator (LI) in a Radio Link Control (RLC) where a PDU mode is used in a protocol structured RLC layer for data transmission/receipt, the improvement comprising a eliminating from a next PDU an information component indicating that a current PDU size corresponds to the total size of components of the PDU, if the current PDU size corresponds to the total size of components of the PDU and the current PDU has information indicating that the current PDU size corresponds to the total size of components of the PDU.
2. The method of claim 1, wherein the current PDU comprises at least one Service Data Unit (SDU), wherein it is determined whether the PDU size corresponds to the sum of the components of the PDU according to a size of the at least one SDU, and the end of each of the at least one SDU is indicated with an LI value.
3. The method of claim 2, wherein if the current PDU includes at least one SDU and the end of a last SDU is indicated with the LI value inserted in the current PDU, the next PDU does not include a LI value indicating that the current PDU size corresponds to the size of the components of the PDU.
4. The method of claim 3, wherein if the PDU size is larger than the size of the

components of the PDU including the at least one SDU, and the end of the last SDU is indicated with the LI value, and a LI value indicating that the difference in the size of the PDU and the size of the components is padded is added to the components of the PDU
5 to match the size, the next PDU does not have the LI value indicating that the current PDU size corresponds to the size of the components of the PDU.

5. A method for inserting a Protocol Data Unit (PDU) Length Indicator (LI) in a Radio Link Control (RLC) where a PDU mode is used in a protocol structured RLC layer for data transmission/receipt, comprising:

setting a size of a PDU to be used in a protocol structure and/or a total size of components of the PDU;

determining if an information LI value for an end of a last SDU of the PDU can be indicated by using the set PDU size and inputting the LI value into the PDU if it is determined to be possible; and

comparing the set PDU size with the total size of the PDU components.

6. The method of claim 5, wherein if the PDU includes an LI for each SDU in the PDU, then a subsequent PDU contains no LI associated with the PDU.

7. The method of claim 5, wherein if the PDU includes an LI for each SDU in the PDU and a padding LI to indicate that the end of the PDU is padding, then a

subsequent PDU contains no LI associated with the PDU.

8. The method of claim 7, wherein the size of the padding is '0' and the padding LI indicates that the padding is present.

9. A method for inserting a Protocol Data Unit (PDU) Length Indicator (LI) in a Radio Link Control (RLC) where a PDU mode is used in a protocol structured RLC layer for data transmission/receipt, comprising:

forming a plurality of PDUs from a plurality of SDUs, each PDU having a header containing at least one length indicator representing a length of a corresponding SDU contained in the PDU or representing a sum of lengths of corresponding SDUs contained in the PDU, wherein

a) a PDU contains a length indicator having a prescribed sequence of bit pattern when the previous PDU header did not contain complete length of the SDUs in the previous PDU; and

b) a PDU does not contain a length indicator that indicates the end of the SDU in the previous PDU if the previous PDU ends exactly with a last segment of the SDU.

10. A method of forming a header of a PDU, comprising:

forming a first PDU from a plurality of SDUs;

forming a header of the first PDU including a plurality of length indicators (LI), the length indicators representing lengths of corresponding SDUs of the PDU,
5 wherein a final length indicator is provided to indicate that the PDU includes a final segment of padding, and wherein the final segment of padding can have a length of zero such that a subsequent second PDU header does not include information regarding the size of the first PDU.

11. A method for inserting a PDU Length Indicator indicating that a previous PDU ends at the end of a last SDU of the PDU in an RLC of a radio communication system where a PDU mode is used in a protocol structured RLC layer for data transmission, comprising:

detecting whether a previous PDU ends at the end of a last SDU of the PDU;

checking whether a length indicator of the previous PDU indicates that the previous PDU ends at the end of the last SDU of the PDU; and

inserting a PDU Length Indicator if the length indicator of previous PDU
10 fails to indicate that the previous PDU ends at the end of last SDU of the PDU.

12. A method for omitting a PDU Length Indicator indicating that previous PDU ends at the end of a last SDU of the previous PDU in an RLC of a radio communication system where a PDU mode is used in a protocol structured RLC layer

for data transmission, comprising:

- 5 checking whether a length indicator of a previous PDU indicates that the previous PDU ends at an end of a last SDU of the previous PDU; and omitting the PDU Length Indicator if the length indicator of the previous PDU indicates that the previous PDU ends at the end of last SDU of the previous PDU.